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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/820,859

04/09/2004

Sung Uk Moon

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EXAMINER

JACKSON, BLANE J

ART UNIT

PAPER NUMBER

2618

NOTIFICATION DATE

DELIVERY MODE

06/19/2007

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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## Office Action Summary

Application No.

10/820,859

Applicant(s)

MOON ET AL.

Examiner

Blane J. Jackson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The Information Disclosure Statement filed 09 April 2004 has been made of record.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willars (US 6,597,679) in view of Virtanen (US 7,020,108).

As to claim 1, Willars teaches a mobile communication controlling apparatus for controlling inter-frequency handover comprising:

A required quality identifying unit configured to identify a quality required for data addressed to a mobile station (figures 1-3 and 7, column 4, lines 8-15 and column 8, lines 15-55, after the mobile station receives the measurement order to support an inter-frequency handover, the mobile sends a compressed mode request to the network, the compressed mode request defines the slot and defines when the mobile can enter compressed mode),

A transmission rate control unit configured to control a data transmission rate of a higher layer (column 2, lines 47-59, measurement slots are created by transmitting the data of a frame with a lower spreading ratio where reducing the spreading factor by two means that the symbol rate of the information stream is doubled such that the same amount of user data is provided in half of the selected transmission gap),

An inter-frequency handover instruction unit configured to temporarily suspend signal transmission from a radio base station connected to the mobile communication controlling apparatus and allow the mobile station to perform inter-frequency measurement (figure 7, column 8, line 56 to column 9, line 2, the base station prepares the WCDMA transmission slot (205) and once the slot occurs, the mobile station takes the handover measurement from the second base station).

Willars teaches a transmission rate control unit configured to control a data transmission rate of a higher layer in response to a compressed mode request from the mobile terminal but is not clear the transmission rate is based on the identification result supplied from the required quality identifying unit.

Virtanen teaches a method for preparing an inter-frequency handover using a compressed mode between a network element and a mobile station, column 2, line 16 to column 3, line 37. Virtanen discloses there are three ways to create the transmission gaps used in the compression mode where a first approach to limit the amount of user data delivered from the upper protocol layers to the first protocol layer does not work for delay-sensitive applications, column 3, lines 38-59. Virtanen further discloses a second method of reducing the spreading factor by two which increases the symbol rate of the

information stream or a third method to puncture the coded data so that the rate of the coded data is less in the compressed mode than in the continuous transmission mode works for real-time data applications, column 4, lines 4-11.

Since Willars discloses the mobile defines the method of creating the slot in the compressed mode includes the type of slotted mode and other information, column 8, lines 29-55, it would have been obvious to one of ordinary skill in the art at the time of the invention to recognize the information included in the compressed mode request by the mobile station of Willars would necessarily consider the type of user data to be interrupted as suggested by Virtanen is delay sensitive to implement a type of compression mode that would not degrade ongoing data transmission.

As to claim 2 with respect 1, Virtanen of Willars modified teaches the required quality identifying unit determines whether the identified quality accepts delay variation and if the identified quality does not accept delay variation and if the identified quality does not accept delay variation then the transmission rate control unit reduces the transmission rate of the higher layer (column 3, lines 38-59, a third alternative to create a transmission gap is to puncture the coded data so that the rate of the coded data is less in the compressed mode than in the continuous transmission mode).

As to claim 3 with respect to claim 2, Virtanen of Willars modified teaches the transmission rate control unit reduces the transmission rate of the higher layer below a physical layer transmission rate when the identified quality does not accept delay

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variation (column 3, lines 38-59, reduce the spreading factor where the symbols carry an information stream whose rate is the chip rate divided by the a spreading factor, reducing the spreading factor by two means the symbol rate of the information stream is doubled).

As to claim 4 with respect to claim 1, Willars teaches the inter-frequency handover instruction unit allows the mobile station to implement a compressed mode to perform the inter-frequency measurement (figure 7, column 4, lines 1-15).

As to claim 5 with respect to claim 1, Willars teaches a frequency information management unit configured to manage information about allocatable carrier frequencies of surrounding areas of the radio base station (column 3, lines 18-25, the radio measurements are used for handover, the active candidate list managed by the mobile station or base station regarding the neighboring cells).

As to claim 6 with respect to claim 1, Willars teaches the transmission rate control unit controls the transmission rate of the higher layer if there is an allocatable carrier frequency in the surrounding areas (column 6, lines 56-22, for handover the mobile station takes comparative measurements when multiple frequency carriers exist in a cell; since a CDMA transmission is continuous, the compression mode is used to create idle slots for the inter-frequency measurements to occur).

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As to claim 7, Willars teaches a method for controlling inter-frequency handover comprising the steps of:

Establishing a wireless link between a mobile station and a radio base station (figure 1, column 5, lines 40-67, typical cellular telephone system),

Detecting a trigger for inter-frequency handover for the mobile station communicating with the radio base station (column 8, lines 14-24, the base station sends a measurement order to the mobile station when the mobile station approaches a geographic boundary or area serviced by other base stations),

Reducing a data transmission rate of a higher layer (column 2, lines 47-59, measurement slots are created by transmitting the data of a frame with a lower spreading ratio where reducing the spreading factor by two means that the symbol rate of the information stream is doubled such that the same amount of user data is provided in half of the selected transmission gap),

Temporarily suspending signal transmission from the radio base station to allow the mobile station to perform inter-frequency measurement (figure 7, column 8, line 56 to column 9, line 2, the base station prepares the WCDMA transmission slot (205) and once the slot occurs, the mobile station takes the handover measurement from a neighbor base station).

Willars teaches the base station reducing a data transmission rate of a higher layer in a compression mode to facilitate comparative measurements for handover but is not clear of determining whether a quality required for data transmitted to the mobile

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station accepts delay variation and reducing a data transmission rate of a higher layer if the required quality does not accept delay variation.

Virtanen teaches a method for preparing an inter-frequency handover using a compressed mode between a network element and a mobile station, column 2, line 16 to column 3, line 37. Virtanen discloses there are three ways to create the transmission gaps used in the compression mode where a first approach to limit the amount of user data delivered from the upper protocol layers to the first protocol layer does not work for delay-sensitive applications, column 3, lines 38-59. Virtanen further discloses a second method of reducing the spreading factor by two which increases the symbol rate of the information stream or a third method to puncture the coded data so that the rate of the coded data is less in the compressed mode than in the continuous transmission mode works for real-time data applications, column 4, lines 4-11.

Since Willars discloses the mobile defines the method of creating the slot in the compressed mode includes the type of slotted mode and other information, column 8, lines 29-55, it would have been obvious to one of ordinary skill in the art at the time of the invention to recognize the information included in the compressed mode request by the mobile station of Willars would necessarily consider the type of user data to be interrupted as suggested by Virtanen is delay sensitive to implement a type of compression mode that would not degrade ongoing data transmission.



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***Conclusion***

The prior art made of record and not relied upon but considered pertinent to applicant's disclosure includes: Steudle (US 6,810,019), Berfstrom et al. (US 6,822,948), Muller (US 6,845,238), Narvinger et al. (US 6,868,075), Petersson et al (US 7,016,320), Voyer et al. (US 7,218,646) and Dahlman et al. (US 5,896,368).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blane J. Jackson whose telephone number is (571) 272-7890. The examiner can normally be reached on Monday through Thursday, 7:30 AM-6:00 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read "Blane J. Jackson". The signature is written in a cursive, flowing style.